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ABSTRACT

This executive summary of a research project explores the general question of how school districts change their domains through the management of major proposals ("issues"). The study, which focused on case studies of three suburban superintendents' management of five to seven major issues, used raw data consisting of interviews with superintendents and other participants, observations of board of education and administrative committee meetings, administrative documents, and newspaper articles. The data were collected and subjected to a six-level method of qualitative analysis in which increasing levels of analytical abstraction were applied, culminating in a general model of issue management and domain. Summaries of project output and papers either in draft or printed separately in part two of this report are included. The study has brought to light major themes including effective issue managers' avoidance of surprising their constituents, the importance of administrative mechanisms, rehearsal as a key aspect of issue framing, and incremental reframing of issues. Cited as methodological contributions to the project are computer assistance in qualitative research, content analysis strategies such as word count and analysis of the subject's causal assertions to derive a "mental map," and informant collaboration in interviews. The report concludes with a description of future projects and an appendix on data reduction procedures. (MJL)

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Part I

Issue Management by School Superintendents:

Final Report on Grant No. G-80-0152

National Institute of Education

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Finally, we have profited from interactions with many colleagues over the course of the study. The comments and challenges raised by our consultants, Rob Lucas and Vic Murray, and by the advisory panel and staff for the School Management and Organization Studies program were especially helpful. Fritz Mulhauser, Program Head, continues to be one of our most interested and critical contacts, for which he has our sincere thanks.

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3. Anne S. Huff, "Discovering Strategic Patterns from Documentary Evidence," presented at the USC Conference on Non-Traditional Approaches to Policy Research, Nov. 11-13, 1981, Los Angeles.
4. Anne S. Huff, "Situation Interpretation, Leader Behavior and Effectiveness," presented at the NATO Sponsored Symposium on Managerial Behavior and Leadership Research, July 11-16, 1982, Oxford, England. To appear in Volume 7: Leadership, edited by J. G. Hunt, et. al., University of Southern Illinois and Pergammon Press.

Executive Summary

The research conducted under this grant focused on the way in which school superintendents manage major strategic issues facing their districts. Five to seven issues in each of three districts were studied for over two years, with particularly intensive data gathering in the 1980-81 school year.

Although the study is primarily qualitative in design, it followed a well specified six level plan of data collection and analysis. The core of the data set is composed of repeated interviews with the superintendents, which were transcribed verbatim into computer files. This material is supplemented by interviews with other participants in district decision-making, observational notes from key meetings, a complete set of agendas and minutes from school board and formal administrative meetings, and a log of local newspaper articles concerning the school district and other community organizations. Coded, computerized storage of interviews and newspaper logs facilitate the review of all material collected on each issue.

As anticipated, the data collected in this study are extensive enough to allow several years of analysis, and several continuing projects have been identified. Considerable analysis was performed during the period of the grant, however, and these findings have been disseminated at professional meetings and other gatherings. Four papers, summarized in this report, are separately available for distribution.

Foci of the Research

Thompson (1967) defined the concept of organizational "domain" as the set of products or services produced by an organization, and the set of consumers, publics, markets or regions for whom those products or services are produced. We would add to his definition the set of technologies or procedures for producing and delivering those products and services. The short run problem facing an organization is how to operate efficiently within the existing domain. The long run problem, in contrast, is how to change the domain.

Given this language, the overarching question to which this project was addressed is stated as follows:

> How do public school districts go about changing their domains? How do they decide to add or delete new curricula, to serve a new mix of clientele, to introduce new pedagogical techniques, to make alternative uses of their resources, to close a school, to implement a new concept of minimum competence, and so forth?

The problem of domain change for public school districts is both important and difficult. Domain change is important because it implies a multiple year commitment of resources. New programs, once implemented, are not easily terminated because interests become vested, equipment is purchased, materials are developed, faculty are hired, expectations are created. While in operation, the quality of education may be strongly influenced by this allocation of resources.

Domain change is difficult because it requires making decisions and commitments under the twin conditions of uncertainty and political differences. Domain change is necessarily uncertain because it requires doing things not done before, the full effects of which are not yet experienced and therefore not predictable. Domain change typically involves political differences because teachers, students, parents, and other local interest groups will be affected differently by any new program and bring different value systems to bear on the issue. Proposals for domain change may also serve as a forum or lightening rod for the expression of other complaints or interests (March and Olsen, 1976).

Managed properly, domain change can serve to keep the school district in tune with changes in school age population, values about and attitudes toward education, the tax system, other aspects of the economic environment, philosophies about educational practice, and other environmental changes. Managed improperly, domain change can result in long term commitments detrimental to the financial well-being of the district and the educational experience of the students.

Administration within a <u>given</u> domain presumes the existence of reasonably well-understood objectives and reasonably well-developed procedures and means for carrying out those objectives. Efficient operation under these conditions of low ambiguity requires careful control and coordination of multiple interdependent activities. Students, teachers, courses and classrooms must be scheduled to maximize coordination and utilization. Course content must be controlled to assure requisite coverage of material. Efficient operation implies the development and use of routine procedures on a repetitive basis. Doubt about the appropriateness of action is to be suppressed.

How to manage within a given domain, under conditions of certainty, is implanted in textbooks and taught in courses on administration. But these same techniques of management may be ill-suited to the task of changing domains, when objectives are ambiguous or in dispute and the consequences of action are unknown or poorly understood.

Indeed, management under conditions of ambiguity is not well studied, developed, or understood. Thompson (1967) argued that under such conditions, decisions are made by "inspiration," that is, by the unarticulated insights of a charismatic leader. March and Olsen (1976) described such decision processes as the random intermixing of problems, solutions, issues, and decision makers in decision situations described as "garbage cans." Weick (1979) proposes a model of learning under conditions of such high equivocality or uncertainty as a process of evolutionary drift driven by random enactment and selective attention under the loose control of only partially consistent retentions from previous experience. Meyer and Rowan (1977) observe that there will always be a contradiction between the systems for operating efficiently within the existing domain (created to be in tune with some old environment) and the rationales created for interfacing legitimately within some new environment. Whereas administration for current efficiency is characterized by nearly complete knowledge, consistency and acceptance of the status quo, administration for future domains is characterized by ignorance, inconsistency, and rejection of the status quo.

The particular challenge facing school districts, or any administrative organization, is <u>simultaneously</u> to accept the existing domain (and thus to permit efficient short run operation) and to reject it (and

thus to open the organization to operation within new domains). Discovering how school districts, and in particular superintendents as their chief executive officers, meet this challenge was the aim of the research proposed to NIE. There is at present no widely accepted theory of how this task is or should be done. But it is the central task of administration, and is therefore an area worth investigating.

Domain Maintenance and Change through Issue Management

The key theoretical assumption of the project was that domains cannot be changed by proclamation, without some specific issues through which the new proposed domain is articulated. We anticipated that better understanding of domain change therefore rested upon better understanding of the process of "issue management." More specifically we hypothesized:

1. At any one point in time, a school district has a small number (e.g., half dozen) of "issues" or major proposals for district level changes at various stages of development.
2. These issues serve as a vehicle or "carrying wave" for introducing new domains to the organization.

The focus of the research project therefore was on following in detail a "portfolio" of issues facing three superintendents in anticipation that shifts in domain would be accomplished through response to these more specific decision situations. Within this context the following ideas also were important to the research.

Issue Life Cycles

We anticipated that each issue could be usefully seen as moving through a "life cycle" of development. The most generic form of this

development might be phrased as a movement from early recognition or inception, through formulation/elaboration, to building political support, and implementation. We anticipated, in contrast to most research on decision making, that what was "at issue" could shift during this process of development. That is, we wanted to look at a series of decisions in a general topic area, rather than assume we would look at a school closing decision, or a curricular decision.

Issue Interaction

In addition, the research was begun with the idea that too little research attention has been given to interaction among issues. We anticipated that issues would interact, merge, split, compete for attention and provide support for one another. Almost all studies of decision making, in contrast (and often for understandable reasons of economy), look at a decision in isolation. They neglect the possibility of learning and multiple motives.

Symbolic Management of Issues

Finally we were quite interested in the process of labeling and symbolism. We speculated that the language used to describe issues would affect not only public response to issue presentation, but the very way in which superintendents themselves conceptualized the issues with which they were involved (Huff, 1983). By a symbolic process we meant the use of some event, act, or other representational form to create or convey a certain set of meanings to some audience for some purpose.

Although management has recently been conceptualized as "symbolic action" (Pfeffer, 1981), as a "language game" (Pondy, 1978), or as being heavily influenced by "organizational stories" (Mitroff and Kilman, 1976; Wilkins, 1983) and "organizational sagas" (Clark, 1970), it has yet to be demonstrated that the control of organizational symbolism exercises significant influence over the actual course of events. Language and other symbolic forms were expected to play a key role in making sense of past events and future possibilities and in communicating complex and unfamiliar ideas. However, other processes were also expected to play important roles in issue management, including the calculation of costs and benefits of new programs, the persuasion of powerful interest groups, the artful merging of issues, the selection of which issues to push and when, the assignment of key personnel, the formation of planning committees, successful interaction with the Board of Education, and so forth.

Research Design

Study of Fifteen Issues in Three Well Managed School Districts

Given the current level of knowledge, we felt it would be inappropriate to study issue management and domain change using techniques of large sample, exclusively quantitative, comparative survey research. What was needed was a research design that permitted the collection of detailed, context-sensitive information of both a qualitative and quantitative nature on individual instances of issue management, so that a descriptive case history and model could be constructed for each issue and district. This strategy necessarily limited the sample size to a

small number of districts and issues. We proposed that 4 to 5 issues in each of three school districts be studied in detail. This unavoidably limits the representativeness of the findings. But we believe that accuracy in understanding the process is of a higher priority than representativeness at this stage of research; generalizability of the findings to other districts can be tested in future research.

On the basis of preliminary field interviews with six school district superintendents in the Chicago area, three districts were selected as the study sites. The three districts chosen were expected to provide especially good examples of issue management because they are administered by successful and activist superintendents, according to their peers and to faculty members in the College of Education at Illinois. We therefore had an opportunity to study domain change and issue management at its most effective level.

The three districts chosen for study have been given the pseudonyms of Shady Grove, Riverside and Allison Park. These three districts and the issues we studied in each can be described, with somewhat altered characteristics to preseve their anonymity, as follows:

1. Shady Grove, Illinois, is an upper middle class suburb of Chicago, populated by families whose breadwinners tend to be employed in management and the professions. It is politically conservative, and strongly supported Reagan in the 1980 Presidential election. Community members place a high value on education, and take as their educational reference group other elite metropolitan suburbs from across the country, such as Scarsdale and Palo Alto. School administrators pride themselves on being educational leaders rather than

followers, with an emphasis on excellence, innovation, individualized instruction and strength in basic education. Candidates for public office, including school board members, are selected by a caucus of community leaders, and typically run unopposed. The school system is organized into an elementary district (K-8) and a high school district. We studied the elementary district.

Robert Sampson, the Superintendent, received his Ed.D. in the early 1960's and has been Superintendent of the Shady Grove Elementary School District for about ten years. He is active in state and national organizations and characterizes himself as "a program person" in leading the district. His central administrative staff consists of an Assistant Superintendent, a Business Manager, a public relations officer, a school psychologist, a building and grounds supervisor, and various clerical personnel.

The district consists of six elementary schools and the junior high. Enrollment has dropped 24% since 1973-74 to its present 1980-81 level of about 2100 students. Staff reductions paralleled the enrollment decline and certain programs were phased out during the 1970's, so that the district is currently in good financial condition. Vacant classroom space has been rented out to a local junior college and other non-profit community organizations. To date, no neighborhood schools have been closed.

Issues studied in this district include:

a) Computer Curriculum - an issue involving the appointment of a community committee to study computer curriculum ideas, culminating in a decision to adopt a district-wide computer program.

b) Computer Curriculum Implementation - the implementation of the initial computer program and the request for additional funds over a five year period.

c) Foreign Language - an issue involving restoring and expanding language instruction from cutbacks made in the earlier period of financial constraint.

d) Merit-based pay - a long standing interest of the superintendent that did not develop into an issue of district attention.

2. Riverside is a blue-collar, factory town of about 10,000 population in the distant suburbs of Chicago. The high school district we are studying draws students from several neighboring elementary districts for grades 9 through 12. Enrollment has been steady or growing until very recently. However, during the three years covered by the study, enrollment declined from about 2,600 students to the present level of 2,400 students. Athletics is a central value in the district. There are not only varsity teams for each of the major sports, but one and sometimes two junior varisty teams.

There are two buildings in the district: a Central City building housing the 11th and 12th grades and a building on the outskirts of the city housing the 9th and 10th grades. Each building is headed by a principal and an assistant principal. The administrative staff of the district in late 1981 consisted of the Superintendent, an assistant Superintendent, and a Business Manager. The two principals also carry out district functions. These five people, plus the assistant principals, constitute the district's Administrative Council which meets once a week.

The Superintendent, Jim Peterson, had been Superintendent at Riverside for nine years at the beginning of our study. He succeeded a superintendent who survived in office less than two years. One of Peterson's fortes is extensive knowledge of financial management. He plays a leading role in developing and executing the short- and long-run financial activities of the district. He is highly visible in community activities and keeps in close touch with various sectors of the community through service clubs and a variety of informal contacts. He also is active in school administrative affairs at the state level.

The issues studied in this district included:

a) Referendum - an attempt to pass a bond for a new gymnasium.

b) All Day for Seniors - an issue involving changing graduation requirements and discontinuing a policy of allowing seniors early dismissal.

c) Asbestos - the discovery and removal of asbestos in one building.

d) Voc Coop - the consideration of joining other districts in a regional vocational education center.

e) Budget Cuts - consideration of budget restrictions after a period of increasing enrollment.

f) Administrative Reorganization - an issue triggered by retirement of one member of the administrative staff, leading to reassignment of roles and titles among the administrative staff.

3. Allison Park, Illinois, is an upper middle class suburb of Chicago. The elementary district we studied has a junior high (grades

6-8) and four elementary (K-5) buildings. The district has had a national reputation for many years, and this tradition is mentioned often by teachers and community members. The school age population in Allison Park has declined about 30 percent over the past ten years to provide a present enrollment of approximately 1600.

Budget cuts reflecting this decline fell especially heavily on the administration rather than teaching programs. The administrative staff at present consists of the superintendent, business director, and director of pupil services. School Board committees fulfill some planning functions. Dick Ingram, the Superintendent, had been in office four years when we began the study.

The issues studied in Allison Park include:

a) Tope School - initially an issue revolving around the disposal of the original junior high building, which expanded into a consideration of reorganization from neighborhood schools into a "central campus" configuration.

b) Teacher Center - an effort to provide continuing educational experiences for teachers.

c) Philosophy Committee - a district-wide attempt to restate educational philosophy.

d) Principal Replacement - consideration of choosing the principalship at the junior high.

e) Planning - formalization of financial and demographic projections.

Six Level Structure for Data Collection and Analysis

One of the difficulties with doing qualitative research on a case-by-case basis is that there has been no widely accepted method for carrying out an orderly, replicable, tightly disciplined research process comparable to that which exists for quantitative survey research. The methodology for qualitative research has typically been tacit. We attempted to articulate more formally some underlying notions of qualitative research in this project by structuring the data analysis and model building in a fairly rigorous procedure tied to distinct levels of analysis. Specifically, our analysis was conducted at six different levels of abstraction and generality:

1. Raw data: Four types of data were collected:

   a. Interviews with superintendents, Board of Education members and other relevant participants. Interviews were transcribed verbatim (when tape-recorded) into computer files; otherwise they were recorded in detailed field notes. This material forms the core of the data base. Over the course of the study we conducted sixty-six tape recorded interviews averaging two hours in length.

   b. Observations at meetings of Boards of Education and various administrative committees. We attended eight board meetings and fourteen administrative meetings in the three districts. Comments on these meetings were recorded directly after the meeting, and transcribed for computerized access, as a supplement to field notes. Seven of these meetings were tape recorded. A key series of administrative meetings on budget decisions made in one district have been transcribed verbatim.

These data alone, from over twenty hours of tape, constitute an interesting and potentially important set of data.

c. Documents such as agendas, minutes of meetings, speeches, newsletters and news releases. This material fills twenty-three 2 inch 3 ring binders. It has been coded for reference to the major issues followed in each district.

d. Newspaper articles on the local district and other similar public organizations. Brief summaries of the entries in this data base have been put in a computerized log.

We cannot overestimate the importance of a careful structuring and indexing of the raw data collected for this study. Without it, subsequent analysis and reanalysis would be painfully slow and haphazard; with it we have a better chance of building a systematic procedure into the study. For example, the strict discipline of searching for and considering all indexed items relevant to a given issue reduces the likelihood of conveniently ignoring some deviant facts when testing a model against the raw data base.

2. Profile for each district: Background information on each district was solicited from the superintendents; collected from local sources (such as Chamber of Commerce Publications, and newspapers files), and supplemented by demographic data available from the U.S. Census. The purpose of collecting community profiles was to ensure our exposure to a broader context so that better sense could be made of the descriptions and analyses of specific issues.

3. Life cycle history for each issue: The issue was the primary unit of analysis in the study. A case description of the history of

each issue studied was prepared from the verbatim transcripts of interviews, supplemented by other material available in the data bank. We attempted to make these life cycle histories purely descriptive, and to refrain from abstract conceptualization as much as possible. The purpose of the history was to pull together the facts relevant to each issue into one orderly description from the various, disparate raw data sources. Every effort was made to use the language and terms of the informants themselves, and to refrain from interjecting our own theoretical concepts and language. We are preparing a paper, "Budget Cutting in Riverside," which includes some material illustrating our procedures at this level.

4. Theoretical analysis for each issue: Each issue then became the subject of analysis at a theoretical level in an attempt to develop a model or theory peculiar to each issue. Whereas the life cycle history attempted to pull together the relevant raw data into a purely descriptive but coherent portrayal, the theoretical analysis attempted to generalize the description to a more abstract level, to build a model for each issue without forcing all issues prematurely into one preconceived conceptual mold. No attempt was made at this stage to generalize across issues, or to direct the analysis in similar directions.

What is desirable about this process of generalizing from data to description to theory is that the emerging theoretical building blocks are closely grounded in actual cases described in

rich detail. And the theoretical richness is not lost by aggregating over issues prematurely. Most of the papers now available for distribution, and described in the next section of the report, are the result of analysis at this level of abstraction. More particularly, Paper #1, "Achieving Routine," provides an analysis of implementing a computer curriculum in Shady Grove. Papers #2, 4 and 6 analyze some aspects of a school closing in Allison Park. Paper #5 looks at "Budget Cutting in Riverside." It should be emphasized that in each case we have analyzed aspects of issue management that seemed especially salient to us. The data are rich enough to allow analysis of more than one aspect of each issue. Some of this richness is picked up in the last two levels of analysis.

5. A model of issue management for each district: At this level of analysis, the aim is to begin consciously generalizing across issues within a given district. We are still in the process of preparing a theoretical model of issue management for each district. At level 4, the presumption was that each issue has a coherence of its own, so that theoretical processes unique to a given issue can exist. At level 5, we are looking for coherence in the issue management process at the level of the district. Of the various processes that make up the district model of issue management, only some may surface in a given issue, so that examining several issues is necessary for beginning to approach a complete district model. It is somewhat like needing to execute many runs of computer program in order to expose all of its loops and subroutines, so that the whole program may be deciphered; an issue is like a single run

of the program, and what we are calling the district model is like the entire program. The aim of this stage of the analysis is to infer what a feasible model of the district process of issue management as a whole might look like at the time of the study.

6. A general model of issue management and domain change: Finally, at the sixth level of analysis, we will attempt to compose the district models developed at level 5 into a general model. Common terms will be sought to describe similar processes, apparently disparate phenomena will be re-conceptualized, and seen as similar, and so forth. While we have not yet published any material at this level of analysis, some themes across districts are becoming apparent, as summarized in the next section of this report.

Computerized Data Storage and Retrieval

A third critical aspect of the research design involved use of the computer. In the proposal, we said that we would experiment with the feasibility of using the computer to store and retrieve interview material. In fact, we have made extensive use of the computer, and this aspect of the project dominated a substantial portion of the total effort. The more technical aspects of these efforts are summarized in the Appendix to this report.

We used the computer in a variety of ways:

1. Word Processing. Almost all interviews were tape recorded. Verbatim transcripts of these interviews were made directly at a computer terminal, using word processing commands, once we were able to locate and train a secretary skilled at transcription and willing to work with the computer. To ensure accuracy a second

secretary proofed the transcription against the tape. We found that problems with tape quality, even under the best of interview circumstances, made this proofing necessary. A second listener often was able to fill in gaps which the first person could not interpret. Use of the computer greatly facilitated correcting and amending the original transcription, since corrections could be made without retyping the bulk of the manuscript. Especially since we made verbatim transcripts (to allow later word level analysis), the word processing and manuscript printing capabilities of the computer were very useful.

2. Retrieval. A research assistant coded each interview after the transcription was checked. These codes were added to the formated version of the transcript, as described in the Appendix. Codes served as a guide to reading the printout of each interview. In addition, of course, a simple search program allows computerized retrieval of material under each code. We had a short program written which would generate a printout of the portions of each interview which pertained to the issues followed in each district. This printout maintains the line numbers from the original transcript, so that if desired we can examine material which occurs before and after the discussion isolated by a given code. This can be done easily at the computer terminal without referring back to the hard copy printout.

3. Storage. The physical bulk of material collected in a project of this kind is considerable. We have put all computerized material on tape for long term storage. A duplication of the tape is placed

in a second location as a safety measure to protect the data collected. The tape allows us continued access to the material gathered over a long period of analysis.

4. Project Management. We also used the word processing capabilities of the computer to facilitate project management. Various logs were kept on the computer and updated as necessary. For example, the tape from each interview was identified in a log kept for that district. As it was transcribed, checked and coded, the initials of each person were added to the log. The log also identifies the computer codes for the input and output files, as further described in the Appendix.

Summary of Project Output

Dissemination at Professional Meetings

While we are still analyzing the vast amount of data collected for this project, a number of presentations have been made describing the project and discussing aspects of the results to date. The first presentations were made after the proposal was submitted, but prior to awarding of the grant, on the basis of our preliminary field interviews. These presentations include:

December 1979:	Organizational Behavior Group, Department of Business Administration, University of Illinois (Urbana)
March 8, 1980:	Organizational Studies Group, School of Management, York University (Toronto)
March 11, 1980:	Department of Leisure Studies, University of Illinois (Urbana)
April 29, 1980:	Organizational Behavior Group, Case Western Reserve University, Cleveland, Ohio

May 15, 1980:	Educational Alumni Association, University of Illinois (Urbana)
July 14, 1980:	School of Management, University of British Columbia, Vancouver, B.C.

Since the awarding of the grant, we have made the following presentations on various aspects of the project:

November 19, 1980:	Center for Instructional Research and Curriculum Evaluation, College of Education, University of Illinois (Urbana)
November 24, 1980:	Industrial-Organizational Psychology Program, University of Tennessee (Knoxville)
November 25, 1980:	Distinguished Lecture Series on Organizations as Knowledge Producing Systems, Georgia Institute of Technology, Atlanta, GA.
April 13-17, 1981:	American Educational Research Association Meeting in Los Angeles, Organization Theory Special Interest Group Session
July, 1981:	"Accounting in Organizations" presented at the UCLA Conference on Accounting in its Organizational Context
November, 1981:	"Discovering Strategic Patterns from Documentary Evidence," presented at a University of Southern California Conference on Strategic Management
July, 1982:	"Situation Interpretation, Leader Behavior and Effectiveness," presented at a NATO sponsored Symposium on Management Behavior and Leadership Research
February 7, 1983:	Policy Colloquium, McGill University, Montreal, Canada
February 8, 1983:	Concordia University organization behavior seminar, report on "Budget Cutting at Riverside"
February 18, 1983:	University of Illinois Department of Business Administration Policy Seminar, general overview of project and report of the budget cutting study

March 23, 1983: "Emergent Policy Reframing," invited lecture presented at New York University organizational behavior seminar series

April 9-11, 1983: American Educational Research Association Doctoral Consortium (Montreal, Canada)

Papers Now Available

A number of papers have already been drafted from this project, as briefly summarized below. The complete drafts are available separately as Part II of this report. Summaries of two other papers, now in draft form are also provided.

1. Louis R. Pondy and Anne S. Huff, "Achieving Routine," presented to the Organization Theory Special Interest Group, American Education Research Association, April 1981.

The research reported in this paper began with the preconception that uncertainty and the need to discover new "framing" concepts would most frequently face school decision makers who tried to significantly alter their domain. The first such decision investigated in depth, a curriculum decision that dominated the attention of top level administrators for one and a half years, did not, however, follow these preconceptions. Instead, it passed quietly through a set of established procedures, rhetorically deemphasized as a major event.

Two explanations are offered for the achievement of this smoothly orchestrated event. First, a set of well-known procedures or "administrative mechanisms" were available to channel consideration of the new curriculum. Second, the superintendent had gradually developed a way of conceptually relating the new curriculum to other well-established

curriculum concepts. We suggest not only that "orderly" transitions of this sort have been underattended in recent years, but that the ultimate challenge to even the most dramatic organizational decisions is to achieve just what is exhibited in this case history--the transformation of the new into the unexceptionable.

2. Richard J. Boland, Jr., and Louis R. Pondy, "Toward an Interactive Model of the Natural and Rational Aspects of Accounting in its Organizational Context," presented at the UCLA Conference on Accounting in its Organizational Context, July 29-31, 1981. To appear in Accounting, Organizations and Society

Research on accounting in its organizational context is most fruitfully done by attempting to understand how its rational and natural aspects interact within the lived experience of individuals. Accounting serves both objective and symbolic functions. Research that emphasizes a genuine union of the two aspects reveals accounting's role as a complement and supplement to more qualitative and interactive forms of problem solving. It also reveals that accounting is a technique that must be transcended to be used effectively and that its inadequacies challenge humans as moral agents.

Two case histories, one of which describes the interactive use of quantitative and qualitative data in the school closing decision at Allison Park, illustrate this way of understanding information use.

3. Anne S. Huff, "Discovering Strategic Patterns from Documentary Evidence," presented at the USC Conference on Non-Traditional Approaches to Policy Research, Nov. 11-13, 1981.

No one is more motivated than the thoughtful organization leader to discover meaning in the tangible activities of the organization. Although we should not be bound by the deliberate intentions of decision makers in the study of organizational strategy, we should not abandon study of the CEO's interpretations as particularly valuable clues to understanding strategic decisions.

Written materials prepared by organizational leaders offer a particularly rich source of data on the strategic patterns seen by those who create strategy. Several methods of analysis are available to systematically study such material. One of these methods, which focuses on causal assertions, is described in this paper. The outcome of this method of analysis is a "mental map" of concepts and their effects on one another. The method, developed by Robert Axelrod and his associates (1976), has been used to analyze both historical and contemporary material in political science. In this paper it is applied to a set of speeches made by a superintendent of schools over a fifteen year period.

The aim of the research is to document the development of the superintendent's thoughts about key strategic decisions over time. Several different sequences of development are evident in the series of mental maps developed so far from the speech file. The researcher with access to this kind of documentary evidence has a rich context for understanding the pattern which a decision-maker ascribes to a series of actions. Without this context important concepts are likely to be overlooked, or given more superficial treatment than documentary evidence makes possible.

4. Anne S. Huff, "Situation Interpretation, Leader Behavior and Effectiveness," presented at the NATO sponsored Symposium on Managerial Behavior and Leadership Research, July 11-16, 1982, Oxford, England. To appear in Volume 7: Leadership, edited by J. G. Hunt, et. al., University of Southern Illinois and Pergamon Press.

The changing use of language is a particularly important source of data for understanding the way in which leaders structure and restructure their interpretation of decision situations. This paper presents a method of analyzing leader statements about decision situations as a series of arguments. In this perspective, the leader is seen as needing to find an argument that is strong enough to warrant action. The chief executive's participation in many discussions can be interpreted as the construction of trial arguments to see if they have such strength.

Deciding on a way to approach a decision situation can be a time consuming process, however, and another important leadership activity is to influence organization members to adopt similar or compatible interpretations. The behavior required to effectively frame a situation can differ from the behavior required to effectively transmit that frame to others. The conclusion of the paper speculates that in time pressured situations the leader's broad responsibilities make it likely that others will more quickly be able to frame situations and begin to influence others.

5. Louis R. Pondy, "Budget Cutting in Riverside: Emergent Policy Reframing as a Process of Conflict Minimization." (in draft)

The purpose of this paper is to describe and analyze the process of budget cutting in the Riverside High School district. First, we merely describe the facts of the case with as little theoretical interpretation as possible. Second, we reinterpret the case in light of the theoretical framework of Emergent Policy Reframing (EPR). The attempt here is merely to develop a theory of budget cutting in Riverside; no attempt in this section is made to draw larger conclusions for strategic adaptation in general. Third, we attempt to extrapolate the findings from this case to other related cases of strategic change in school systems and other organizations. In particular, we argue that EPR works to minimize conflict during the process of change.

6. Anne S. Huff, "Strategic Framing." (in draft)

This paper focuses attention on a situation which required an organizational leader to reframe, or reinterpret, a decision made in the past. The data are taken from the verbatim transcripts of fourteen interviews conducted over a one and a half year period. The interviews are content analyzed both for changing structure and changing subject. The analysis gives detail to accounts of strategy formulation offered by several previous researchers, and has the advantage of being drawn from a different kind of data--generated by the decision maker during the course of the situation's development. The conclusion of the paper emphasizes the similarity between organizational strategy and scientific theory, and suggests in particular that general framing concepts are given meaning by their use in a wide variety of contexts within the organization.

Major Themes from the Research to Date

While the papers summarized above represent only a portion of the analysis which will ultimately be drawn from the material collected under this grant, several overarching themes are becoming apparent.

The Avoidance of Surprise

For most of the issues we studied in this project, issue management is better described from a routine perspective. We are beginning to speculate, on the basis of our observations, that the effectiveness of administrators such as Samson, Peterson and Ingram may rest on their ability to in general not be dramatic in the work they do. Instead, they fold changing circumstances into an on-going fabric of sense-making which absorbs the events which might seem startling to newcomers or outsiders.

The structure of meeting agendas, which repeatedly drop small, manageable, updates on the progress of activities appears to be a major way in which this is accomplished. Reminders and updates divide into manageable pieces the impact of something like the introduction of computers or the discovery of an asbestos problem. They gradually make a new concept familiar. Repeated references help actors less centrally involved in the day-to-day life of the district, such as Board members, parents and the public, see new activities in the district as non-startling.

To reverse the argument we made in our original proposal, and the argument that has held the center-stage in much recent writing about organizations, the well understood and well developed procedures which

constitute administration within a given domain sooner or later must spill over into the administration of domain change. Dramatic descriptions of attempted domain change, such as those offered by Thompson (1967), March and Olsen (1976) and Weick (1979), perhaps may be viewed as problematic situations for which successful administrative mechanisms and convincing arguments could not be generated, rather than as the norm.

The Importance of Administrative Mechanisms

All three of the districts studied structured meetings and other events. These "administrative mechanisms" were somewhat idiosyncratic to each district, but well understood through repeated use within the organization. These mechanisms might be thought of as the empty containers into which issues are poured. They are stable parts of the administrative structure ready to be called into being or "attached" (Sproull, 1980) to some specific issue. Each mechanism appears to have a routine way of operating, and each is a general routine (or operator) in that it can be applied to the processing of a wide variety of problems.

Specific administrative mechanisms are well-suited to carrying out some tasks and poorly suited to carrying out others. For example, a "curriculum meeting" of the School Board seems ideally suited to a general overview and assessment of a situation, but poorly fit for creating and evaluating solutions or even for defining the problem in the most fruitful way.

The regular meeting of the Board was a particularly interesting administrative mechanism. It served the function of publicly taking and displaying decisions to create committees, approve findings, commit funds and so on. Strung together with other administrative mechanisms, board meetings comprised a long sequence of information processing routines that constituted the observable artifacts and vehicles of an issue management strategy.

Administrative mechanisms served not only to advance the decision process but also to link key sets of participants: outside experts to the Board, the administrators to the teaching staff, the district to the public. The sequence of mechanisms could be seen as creating a network among organizational actors. Further, the superintendent often plays an important linking role. Thus, while participation of other players shifted over time, as March's "garbage can model" (1976) asserts, there was significant continuity in the involvement of key actors, and the administrative mechanisms themselves further carried information from actor to actor. Our perspective discovered patterns in contrast to the more micro studies of decision-making offered by Mintzberg or the single issue studies of March.

Rehearsal as a Key Aspect of Issue Framing

We found that the issues we studied often had long histories. We speculate that this long period of attentiveness is precisely what allowed the introduction of several issues to be so smoothly managed. It is not just that members of the community, the faculty, and the administration were sensitized by the superintendent to the

issue. Continued attention to the same theme contributed to the superintendent's own ability to present a given issue as a normal, natural, routine, set of decisions.

This point might well be underscored. For though it is possible and sometimes necessary to present major organizational decisions as new and dramatic, they will not become secure until they sink into the daily life of the organization. The test of whether an attempted domain change will "take" is whether it can in fact be expressed, sooner or later, as unexceptionable, as not requiring constant attention.

Incremental Reframing

The achievement of domain change cannot be seen as wholly depending on language of course. We have begun to argue (in paper #5) that as decision makers begin to sense that the environment is changing in a fundamental way, they do not immediately reject the old frame of reference or set of operating assumptions; nor do they immediately create and publicly embrace a new frame of reference. Instead, during the time period of ambiguity when the environment is changing, they are likely to attempt holding both frames of reference.

In the Riverside case the old expansionary frame coexisted for a time with the new budget cutting frame. Actions were taken that were consistent with both frames. Signals that were deliberately ambiguous were sent to various publics. Expectations were created about the possibility of cuts by using the device of "controlled leaks" to opinion leaders in the system so as to create a "mind set" (the

superintendent's term) receptive to the possibility of fundamental change. Small but meaningful actions were taken (e.g., reduction in the summer school budget) that gave tangible, symbolic reality to the possibility of change. In sum, the administrative response during an ambiguous interregnum did not fully reject the old nor fully embrace the new policy assumptions. The theoretical label used to order these data is that of "emergent policy refraining."

The behavioral and political work to manage the situation was matched by careful and detailed analytical work by the superintendent and his staff. Detailed analyses were carried out of class sizes and student demand, area by area, to see where staff cuts could be made with minimum loss of educational quality. Discussions were evoked about latent priorities (e.g., academic subjects vs vocational training). Hiring an outside consultant to advise about how to cut driver's education without loss of state subsidies was considered. A careful study of various financing mechanisms (e.g., tax anticipation warrants, advance refunding bonds, etc.) was made in order to determine how much of the forecasted deficit (10% of the instructional budget) could be financed using short-term debt instruments. Plans to revise year long clerical contracts to nine or ten month contracts were developed in detail, including attention to revised fringe benefits such as insurance coverage and vacation leave. None of this detailed analytical work was made public outside of the seven member administrative council, except for fact that it was going on, itself one of the ambiguous signals of impending change.

We believe that this case study illustrates one way in which domain change can be managed successfully. There was remarkably little resistance or outcry to the cuts as they were announced. The key, we believe, is in a combination of detailed, closely-held analytical work, together with a gradualist or incrementalist approach to the politics of weaning the organization away from an old frame of reference and signaling the emergence of a new policy frame.

Methodological Contributions to the Study

Those interested in strategic decision making frequently complain about the special difficulties they encounter in their research. Three aspects of the subject matter in particular cause difficulties. Positioning and repositioning of an organization often takes long periods of time. The organization achieves this position by manipulating complicated interdependencies. Further, strategy involves the most difficult decisions--those that arise out of new and uncertain conditions for which the organization has not established a response.

The traditional method for dealing with long time periods, complicated interdependencies and uncertainty in the study of organizational strategy and policy is the detailed case history of an individual organization. More recently, quantitative studies of groups of organizations have allowed more formal comparison of strategies across organizations. Despite the promise of larger data bases, it is our belief that we still need to maintain contact with the individual organization and the individual decisionmaker. Those who directly experience the problems of strategic management will always have valuable information to offer--

information that is complementary to the perspective offered by quantitative methods. It is to our benefit not only to broaden the repertoire of methodologies for dealing with data from larger sets of organizations but to develop more ways of collecting data from the individual organization in its unique situation.

This project addressed the problems of gathering information about strategic decisions from the individual organization in three rather unique ways. We used the computer for processing, cataloging and retrieving qualitative data. We used methods of diagramming to trace shifts in leader thinking about key issues over time. We also discussed our emerging theoretic interpretations with our informants. In this section of the report we argue that these decisions are attentive to the needs of policy researchers to understand long term, complex and ambiguous events.

Computer Assisted Qualitative Research

The use of the computer to extend the capability of researchers to investigate complicated subjects needs relatively little explanation. In this project, however, it should be emphasized that the computer aided the collection of a more extensive qualitative data base. Mechanical collection, transcription and storage of the amount of data collected for this study would have involved considerably more personnel than we used. Our aim to retrieve and examine all pieces of data collected over a period of more than two years on each of the issues we studied would be much more difficult to meet without computerized storage. Finally, computerization allows word level content analysis, as described below.

Diagraming "Mental Maps"

The traditional case study method of investigating strategy often depends upon in-depth interviews with organizational participants. While this method can generate many details, it still can be difficult to capture the complexity of strategic decisions--especially decisions that were made in the past.

Organization members must try to "tell their story" in an understandable way to a relatively naive outsider--the researcher. No matter how well prepared, this outsider cannot understand the many details that affect decision-making. It is unavoidable that many complicating details therefore are edited from the accounts organization members offer to researchers. As an understandable "story" begins to take shape, new details are presented in a way which makes them fit with the previous account into one whole. A story that focuses on retrenchment, for example, may drive out details about curriculum based contributions to decision making.

The biasing effect of "the story" becomes more problematic as the researcher becomes an accomplice. As the researcher begins to think of an administrator as particularly creative and adaptive, or of an organization as mired in tradition, or of tax limits as a key element of the environment, more and more questions are asked about creativity, tradition or taxation. These threads can easily become stronger bonds in the researcher's story about the organization than they are in the organization.

The potential bias of following a few threads is compounded when longitudinal accounts of strategy are desired. The current view of

the organizational colors recollection of past decisions. The past is unconsciously edited to fit the present, and anticipated future.

Systematic analysis of the documents generated by organizational participants for their own use can help counter these problems, as can the content analysis of interviews conducted over a long period of time. Content analysis provides an unobtrusive measure of the items which concerned organization members at the time of a decision, and their interrelationships. This tally can be used as the raw material from which a pattern is generated by the researcher. It can also be used to supplement financial records, and observations; as the means of jogging the memory of informants; and as the source of ideas for futher investigation.

It is important that this kind of documentary analysis draws upon material capable of revealing <u>past</u> interpretation of decisions. Documentary analysis is unbaised by the informant's need to tell a story, the researcher's need to tell a story, or current strategic concepts. Analysis of interviews is subject to the story telling bias, but, as argued below, much more complicated meanings can be transferred through repeated interviews with the same subject.

Because both kinds of analysis use real-time observations, they also offer a basis for comparing different time periods. Memos, reports, notes of meetings and repeated interviews reflect the data that was most salient at the time of decision. Changes in documents and in the emphasis of interviews over time are apt to be more accurate indicators of change in strategic pattern than recollection provides.

The study of documents and longitudinal interviews also are apt to generate more detail than memory provides.

The most straightforward analysis of this kind of material involves direct count of words used, with particular attention given to changes in word usage from document to document. Word based analysis lends itself to computer analysis. The General Inquirer (Pool, 1970), written in the mid-1950's to facilitate the study of political communication, is perhaps the best known of these programs. A summary of its descendents and other recent programs for content analysis can be found in Holsti (1969). In this project, word counts were used as an adjunct to the analysis described in paper #6 on strategic framing.

Word based analysis is limited, however, in the complexities it can capture. Two more sophisticated methods of analysis used in this project attempt to diagram the "mental maps" of decision maker. The first of these methods, used in papers #4 and #6, looks at the <u>assertions</u> made in interviews over time. This method is based on the work of Steven Toulmin, a philosopher, who has suggested that "arguments" are logically composed of several different elements: the basic "claim" itself, the data offered in "support" of that claim, an expressed or implied "warrant" or principle that make it possible to deduce the claim from the evidence, and "qualifications" limiting the scope of the claim (Toulmin, 1957; Toulmin et. al., 1979). Changes in the structure of argument over time were used as evidence of strategy reformulation in paper #6.

The second method of content analysis used in papers #1 and #3 was developed by Robert Axelrod, a political scientist. This method

focuses on the causal links evident in documentary data. In this method statements are decomposed into nine categories of causal relationships, and represented by signed diagrams. In the two papers cited, Axelrod's method is used to consider links between strategic concepts over time.

Informant Collaboration

We gradually developed a rather unique style of interviewing in this study. The philosophy of interviewing which emerged can best be understood as an attempt to carry out a long term conversation with the superintendents--our major informants. The approach violated an established canon of scientific research by repeatedly revealing to the superintendent our theoretical interpretations. We felt, however, that the subject matter of the study directly necessitated this violation.

The pleasure of conversation comes from the creation of something new. In conversation, speakers are moved to say things that they might not say to themselves. We hoped that the research would stimulate the superintendents to think about things they might not otherwise attend to, and all three superintendents spontaneously indicated at various points in the project that this happened. Similarly, we found that the interviewing process forced us beyond our preconceptions. The most straightforward way of stimulating thoughts about the central questions of domain change and issue management, subjects that interested us in this study, was to make that subject matter clear to ourselves and to our informants.

The important aspect of conversation as a metaphor for strategy research is not, however, that we hoped to get better information by being clear about our interests. Rather, a conversational mode of interviewing was important because in the conversational mode of interviewing we were often challenged to reconsider our statements and modify them. The decision to share our emerging interpretation of issue management with our primary informants, the superintendents, meant that from an initial statement of an idea, and the unexpected response of the superintendent, a third statement--new to all parties--was often created.

The synergistic creation of concepts, ideas that were the property of neither researcher nor practitioner before the encounter, is, in fact, an ideal for strategy research. We need the benefits of good conversation in our contacts with strategic decision-makers because the complexity and uncertainty that we want to understand can only be captured gradually, through a deeper understanding of what another person is trying to say. This strategic understanding can only be achieved through repeated conversation. During the course of the research, through repeated interviewing, we came to know something of each superintendent's experience--and so could make better guesses about the specific meaning of words with many interpretations. We could draw upon and compare perceptions about managerial experiences because we had discussed other experiences before. Better conversation became possible through time, because we had enough in common to understand the shift in context, the unexpected, which can only be built on a shared sense of the expected.

Sharing theory with the informant does violate the concept of uncontaminated data. It might be argued, however, that the concern with researcher-biased results takes a rather disrespectful view of the respondent. We would be quite arrogant to believe that the least hint of our interests will lead to immediate capitulation of previously held views in favor of our own. In this study we became more and more confident that we did not bias our respondents, and we hope to write more fully upon our methodology in a future paper.

Future Projects

We anticipate working on the data base collected for several more years. In the next year we plan to explore the following topics:

Organizational Decline

The budget cutting episode at Riverside provides an interesting opportunity to explore the timely topic of shrinking resources. We have submitted the abstract of a paper on the Riverside decision process to the national meetings of the Academy of Management as part of a symposium on the empirical study of organizational response to shrinking resources.

Group Decision Making

A key part of budget cutting decision making at Riverside involved the Administrative Council. We tape recorded and transcribed four working meetings in which this issue was discussed among the several key administrators in the district. The final meeting, nine hours in length, concluded with the specification of budget cuts for the next year.

These transcripts provide an opportunity for further analysis of group decision making. Much of the literature on group decision making has been based on ad hoc groups asked to perform relatively well defined tasks in laboratory settings. In organizations, administrative groups often have a long history of association and experience in contributing to an ongoing stream of decision making. This is a crucial difference which suggests that interesting information about group decision making could be gathered from more realistic settings. With a colleague, Charles Schwenk, who has conducted lab studies of group decision making, we plan to re-analyze this set of meetings as an example of group decision making in an established group involved with an ambiguous task. The background information we have collected on the district is seen as essential in conducting the analysis, and again makes this set of data quite unique.

This ongoing study has the potential to make an important contribution to the study of strategic management and organizational decision making. Chief executive officers do not formulate their thoughts in a vacuum. They are often swayed by the ideas of those around them. The specific administrative group on which we have data plays an active role in helping the superintendent formulate his thoughts on key issues. This is a little understood area, and one in which our data base is unique as far as we know.

Language and Leadership

Two papers (#1 and #4) written for this project rely on Axelrod's (1976) method for constructing mental maps of causal claims from the

written and spoken records of policy makers. Another paper (#6) uses methods of diagramming arguments based on Toulmin's (1958, 1979) work. Anne Huff plans to continue to explore these and other ways of capturing the complexities of decision maker's reasoning about major issues. The focus of this project will be on the way in which decision makers reformulate their strategies for dealing with important issues in the light of new information and events. The continuing set of verbatim transcripts which we have collected is a unique data set upon which to base this further analysis.

This continuing project also focuses on important concerns in strategic management, and in the broader area of decision making research. Relatively little systematic work has been done on the reasoning of the chief executive officer, who is usually the key actor in determining organizational strategy. New methods are needed to carry out this analysis-methods which we believe can be borrowed from political science, philosophy, and rhetoric. In addition, the longitudinal nature of the data base collected during the NIE study, will allow the study of decision maker's argument to include a focus on changes in executive thought over time. This kind of work has not been done in the field, to our knowledge. We believe it can make an important contribution to understanding strategy formulation.

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APPENDIX A: DATA REDUCTION PROCEDURES

Bette Hill Hughes

INTRODUCTION

A very large amount of information was collected by the interviewers over a two year period. All interviews were tape recorded following a loosely structured interview schedule. Traditionally, in this type of research, the tapes would be transcribed onto typed pages leaving space in one margin for coding and notes. Any corrections or amendments discovered in proofreading the transcript require retyping. To consider one aspect of the material, relevant passages from each interview are often cut from a second copy and accumulated together. This method is cumbersome; more important, once the cutting and pasting of interviews is done there is little opportunity to restructure the concepts along new lines of thought.

This project sought to use the computer as a new tool in data reduction for this type of qualitative research. That is, readily available computer procedures were used to transcribe and correct the interviews, enter the coding and perform searches on key concepts. The advantages of using the computer were:

(1) Interviews could be stored on disks and easily accessed for reading and coding;

(2) Interviews could be easily formatted for neat appearance and ease in coding;

(3) Corrections could easily be made without completely retyping an interview;

(4) The large amount of information collected could be transferred to computer magnetic tapes for permanent, safe storage;

(5) Computer programs could be written to pull out relevant passages (after coding) and produce new files without destroying the original material;

(6) Word level searches could be performed to discover similar themes across interviews.

In sum, the computer offers opportunities to "interact" with the data, coding and restructuring it in a variety of different ways then saving these new versions as well as the original interview.

There were five basic steps in the data reduction process going from taped interview to retrieval of coded or structured data. Each step as it was carried out using a University of Illinois Cyber computer will be described in detail below. At other institutions different computers and procedures may be available but the general steps followed should be duplicable.

Step 1--Data Transcription and Initial Computer Input

When a taped interview was initially transcribed the secretary listened to the tape on a dictaphone device while sitting at a computer terminal. The interview was entered into the computer using a text editor program. At the University of Illinois the text editor on the Cyber computer is called the Illinois Central Editor (hereafter noted as ICE). ICE allows one to open up a file which can be stored permanently on a disk and accessed for entering new text or editing at any time. For the type of Cyber file we used, a local file copy of

the permanent file is made when the file is called up from disk storage for editing. Thus changes are made only on the local copy during the editing session. Then if the changes and/or additions are to be kept, the local copy is replaced as the permanent disk copy. In sum, this system allows one to manipulate the temporary version of one's interview and then decide if the changes should be kept as permanent.

ICE is, however, only a program to enter data or text. It does not allow for formatting the interview in any particular way. We wanted the transcription to look as it would have if the secretary had typed it onto paper in the "traditional" manner; that is, with breaks between speakers and room in the margin for notes or codes. Thus we used commands from a text formatting program called RNF to set up the structure for how the interviews would appear. RNF has a wide range of commands for setting margins, spacing, centering titles, etc. These commands are entered along with the text of the interviews into the disk files using ICE.

We would like to emphasize the relative ease in training non-experienced secretaries to enter interview data onto the computer. Only four basic RNF commands (which are repeated throughout) are needed to format the text, then about six text editing commands are needed to enter, review and correct the text. Additionally a few control language commands to the computer are used to get onto the system, call up files and enter text. In short, only a few hours of introduction to the computer are needed to provide the secretaries with the computer related commands they need. However, it is necessary to have a research assistant who is experienced with the text editing and formatting programs.

This person serves several general functions: (1) instructing the secretaries in how to use the computer, (2) being available for consulting about and "cleaning up" problems that arise with using the computer and (3) keeping the computer accounts updated with sufficient funds. More specific functions for the assistant will be described later.

Step 2--Checking Transcriptions

After the secretary initially entered the interview text and RNF commands into the input file, a second secretary rechecked the transription for accuracy. This is done by simply listening to the interview on the dictaphone while sitting at the computer terminal and "replaying" or printing back on the terminal screen the input file contents. Corrections can be made using ICE modification commands and then the corrected version is replaced as the permanent file. It should be stressed that the interviews are entered verbatim with all pauses, incomplete sentences, interruptions, small talk, etc. The purpose of having exact verbatim transcripts is both to determine who and what prompted certain responses and to understand more fully the mental associations connected with each issue for the superintendents. Additionally the importance of careful checking of the entered text by a second secretary should be stressed. Often the second person was able to hear or understand segments that were missed earlier.

Once the interview is entered and corrected, the RNF program is run and the formatted output file is saved as a permanent disk file. That is, we maintain two files for each interview; one which preserves the

input commands for formatting (which can be further corrected or augmented) and one which has the formatted output (for reference by the researchers). Before the output file is stored, it is given fixed line numbers along the left margin using the ICE text editor. That is, the output file is edited by ICE to produce permanent line numbers. The purpose of these line numbers is to make it easier for the research assistant to enter the issue and concepts codes (described below) onto the computer, and for the researcher to reference specific lines of text.

Step 3—Coding

The RNF output file was coded for key issues or concepts once a "clean" output file was produced. We printed a hard copy of each interview via the computer printer. A research assistant was then assigned to read the transcript and code where the beginning and end of key issues occurred in the conversations. In the RNF commands a wide left margin and double spacing was specified so that there would be room for codes to be entered in this space. The same research assistant was assigned to each of the three districts so that s/he would become familiar with its history and issues. Two types of key themes were coded: 1) the main issues about which decisions were made and 2) frequently occurring topics or concepts which augmented our understanding of the decision making process. Examples of the latter were community opinion, and the role of the school board. A list of the main issues and concepts in each district was made and abbreviations were chosen for each. The beginning and end of each issue or concept was also given special

symbols to be added to the identifying abbreviation. "ISCLOSE," for example, would indicate the "issue start" of a discussion of school closings. "IECLOSE" indicates "issue ends" of this discussion.

Once the research assistant placed the issue or concept codes in the margin of the hard copy, the ICE text editor was again used to enter these codes onto the formatted or output file that had previously been saved on disk storage. Since there were permanent line numbers printed on the hard copy of the formatted interview, the assistant simply called up the appropriate line number in the output file and using ICE modification commands added the codes in the margin. Once all of the codes are entered into the file, this new version became the permanent copy of the output file. Thus we have a file for each interview with the following features:

(1) Entire interview is neatly formatted with breaks between each speaker;

(2) There is a wide left margin where the beginning and end of key issues and concepts have been noted and;

(3) Permanent line numbers are provided along the side to note where in the interview selected passages occur.

It should also be noted that one distinct advantage of this computer coding procedure is the ability to change codes or add new ones to the output file as research needs dictate.

Step 4--Tape Storage

Once we had transcribed, entered and coded the interviews, the next step was to secure this material onto a computer tape for safe storage.

As with all electronic data collection, it is highly recommended that a computer tape be used to store the data in a more permanent fashion than is possible with a disk. The University of Illinois Cyber computer has a program available for writing files that contain formatted text onto at the same time adding any changes made in the files (e.g., new coding) to a second version of the tape. That is, two tapes are always maintained: one tape always contains the prior version of the files while the second tape has the most recent changes added to the file.

It is recommended that tape storage procedures at each institution be carefully investigated for their capacity to store formatted text and allow easy updating of changes in files.

Step 5--Retrieval

Once the formatted intervews are coded as in step 3, they still represent a large amount of material and often many parts of the conversation are irrelvant to given issues. We therefore sought ways to pull out only those sections of each interview that had been coded as relating to a particular key issue in the district. A program was written using the SPITBOL language which searched for each entry of the symbols "IS" and "IE" (for Issue Starts and Issue Ends) along with the issue code chosen for examination ("CLOSE" for "school closing," in the above example). The program pulled out only those lines relating to the specific issue into another file. Thus, this new file would contain only the passages in each interview which the research assistant had coded as relevant to the issue being examined. This new file could be printed to produce a hard copy (using the wide margins for note taking).

It could also be examined interactively (i.e., on the computer screen) using ICE as a text editor to view certain lines within the entire file or to search for certain key words or phrases. (The text editor has commands for printing material on the screen and searching for words the researcher specifies.) In short at this final step, the researcher has the potential to manipulate the coded, reduced file on the computer terminal and using the text editor add new notes or search for occurrence of significant themes.

Computer Word Search Capacity

The capacity to search for key words and roots of words within each interview file is one of the primary advantages of entering this text data into the computer. Using the text editing program (ICE), the researcher can locate all occasions where a key concept or phrase could have been discussed. The search is typically made on the root of a word to capture plurals and other variants. A search for "futur," for example, will pick up "future," "futures," "futurism" and "futuristic." It is also necessary to search for "Futur" to capture instances where these words occur at the beginning of a sentence.

A simple search routine can be performed on the entire formatted interview (RNF output file) or on the reduced version after the SPITBOL program has been run. The line numbers and the text of the entire line where the key word occurs will be displayed on the terminal. Then the research can print a group of lines above and below it to see the context in which the word or phrase occurred. In addition a printout or hard copy of these key lines and their surrounding context can be

obtained by moving these groups of lines into another file which can then be printed.

By counting the number of times a word or concept occurs per interview, some comparative analysis is possible. First, there is a comparative analysis over time of changes in the number of times a key concept is discussed. That is, has the administrator increased or decreased the number of times per interview he discusses a particular concept such as the future of the distrinct. These changes may indicate changes in the importance of certain concepts for the administrator. Additionally, one can compare the number of times different concepts are discussed, such as tradition versus innovation. If the ratio of the use of these different concepts changes over time, it may signal changes in the administrator's long term strategies. In sum, the capacity to perform word searches on all of the interviews provides the researcher with a valuable analytic tool.

Master Sheet for Data Organization

These steps have been explained using only one file as an example. Obviously many files were produced over the two year period and keeping track of them became an important task. We recommend that at the beginning of the data collection process, a master worksheet be produced which contains space for the following information for each district:

(1) The date of each interview;

(2) The interviewers' initials;

(3) The interviewee's initials;

(4) The name of each original input file and the computer account in which it is located;

(5) The initials of the secretary who transcribed the interview;

(6) The initials of the secretary who checked it;

(7) The research assistant's initials who coded each interview; and

(8) The name of the RNF output file and its location.

This master sheet of the interviews can be kept on the computer and updated as necessary. Using the ICE text editor and a few RNF commands the research assistant kept a log with the eight pieces of information listed above for each site. The purpose of this electronic log is to provide updated information for both the secretaries and researchers about the progress of the different data entry, correction, formatting and coding steps for each interview. In addition it provides information for the researchers about the names and locations of the files he/she would access for data retrieval (e.g., using the SPITBOL program to select out relevant passages).

It is recommended that the computer file names for each district begin with a similar name designation. Also they should have a sequential number assigned. For example, the first interview in the Shady Grove district could be GROVE1.

Other Uses of Computer

In addition to its valuable use in organizing the interview data, the computer editing program was useful in three other areas of the project. First, an electronic newspaper file for each of the districts was established. A research assistant read the local newspaper searching for items pertaining to either educational matters (both within the

study district and in related districts) or community matters (both general and financial). These articles were marked on the paper with one color pen for education and another color for community interests. But instead of cutting out each article and filing it away, the article entered a brief summary of each article directly into the computer using the ICE text editor and a few RNF commands. Each entry began with the title of the article and author if given, then the summary and finally the date and page. The articles were entered chronologically under two main headings each with two subheadings:

Education

Study District

Related Districts

Community

General

Financial

The information on related districts was kept very brief as its primary purpose was to provide an estimate of the amount of publicity in surrounding districts. General community information included any articles about political and social matters that reflected the "character" and chief concerns of the community. Financial articles referred to local referendum, bonds, taxes, etc. The advantages of an electronic newspaper file are that the newspaper can be left intact for later reference to the context in which a key article appeared. Additionally with the essential information on the computer, one can search for key phrases, words or issues and easily see how they have appeared publicly. For example, all of the public information about an important issue such as

a school closing can be easily obtained by searching on the key words relating to the issue.

Another use to which the computer can be applied is to keep track of the agendas and/or minutes of meetings held within the district (such as board or administrative meetings). That is, the agenda and a summary of the actions taken can be entered into the computer.

Finally, the word processing capacity of the computer can be used to write and revise research papers. The RNF program has some rather sophisticated commands (in addition to many easier ones) than can be used for formatting text, tables, and quotes in almost any manner needed.